9/28/95

OK
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REVIEW COMMENT SHEET

Return comments to Carol Bicher (Name) 080 (Bldg) 9100 (Phone) 8663 (fax) Comment Due Date August 31, 1995

Document RF/ER 95-0098 (Number) O (Rev) Draft (Draft or Final) OU5 RFI/RI Report (Woman Creek Priority Drainage) (Title)

General (G) comments require resolution but do not require resolution acceptance. Mandatory (M) comments require resolution and resolution acceptance. 1 A03-PPG-004 provides complete definitions of General and Mandatory comments

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	all figures		All figures which are maps must have the source and date of the coverage s	The source and date of coverage has been added to the maps	WRB 9/29/95
M	1 2	first line on page	Replace SITE with RFETS	SITE has been replaced with RFP	WRB 9/29/95
G	3-1	3 1 1 3rd para	Change Paleozoic and Mesozoic to Paleozoic and Mesozoic aged	Incorporated	WRB 9/29/95
M	3-3	3 2 2nd & 3rd para	Change Rocky Flats to RFETS in these paragraphs	Incorporated	WRB 9/29/95
G	3-4	3 3 2nd para 4th sentence	Change High wind speeds to "wind speeds	Incorporated	WRB 9/29/95
M	all	all	Whenever geologic formations are referred to use Arapahoe Formation or Laramie Formation instead of Arapahoe or Laramie	Incorporated	WRB 9/29/95

____ No Comments

Wayne Belcher
Reviewer's Name

W R Belcher
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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G	3-9	3 5 1 2nd para 1st sentence	Change Upper Cretaceous to Upper Cretaceous aged	Incorporated	WRB 9/29/95
M	3-9	3 5 1 2nd para 4th sentence	Change Arapahoe unit" to Arapahoe Formation	Incorporated	WRB 9/29/95
M	3 10	3 5 1 2nd line	Change Arapahoe bedrock" to Arapahoe Formation	Incorporated	WRB 9/29/95
G	3 10	3 5 1 2nd para 2nd sentence	Change "The Upper Cretaceous to "The Upper Cretaceous aged	Incorporated	WRB 9/29/95
M	3-10	3 5 1 3rd para 4th para	Change Sandstone No 1 to No 1 Sandstone	Incorporated	WRB 9/29/95
G	3-11	3 5 2 2nd para 1st sentence	Change "The sandstones that were encountered to "The sandstones encountered"	Agree This section has been deleted The relevant paragraphs have been revised and placed in other sections	WRB 9/29/95
M	3-12	3 5 2 3rd para 2nd sentence	Change "Colluvium to colluvium and "Terrace alluvium" to "terrace alluvium	Incorporated	WRB 9/29/95
M	3-14	3 5 4 2nd & 3rd para	Change Rocky Flats to RFETS	Incorporated	WRB 9/29/95

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G	3 14	3 5 4 3rd para 2nd sentence	Change Alluvium (rocky Flats Alluvium) to Rocky Flats Alluvium	Incorporated	WRB 9/29/95
M	3-15	last para 1st sentence	Add "present" to end of sentence	Incorporated	WRB 9/29/95
G	3 16	1st comp para 2nd sentence	Change any groundwater however to any groundwater however	Incorporated	WRB 9/29/95
G	3 27	3 7 1 2 2nd para 1st sentence	Change consists primarily of" to has been primarily classified as	Incorporated	WRB 9/29/95
G	3 28	Last line	Change Upper Cretaceous to Upper Cretaceous aged	Incorporated	WRB 9/25/95
M	3 29	3rd para 2nd sentence	Change "valley fill Alluvium to "valley fill alluvium"	Incorporated	WRB 9/25/95
M	3-10	1st line	Change Plant to plant"	Plant is the correct use of this word because it is referring to RFP	WRB 9/25/95
M	3 10	3rd para 2nd sentence	Change Laramie bedrock" to Laramie Formation	Incorporated	WRB 9/25/95
M	3-31	1st para	Change all occurrences of Fe to iron	Incorporated	WRB 9/25/95

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	3 33	3 7 1 3 1st sent	Change affected to defined	Incorporated	WRB 9/29/95
M	3 33	3 7 1 3 3rd & 4th sentence	Change 3d and 4th sentence to read Recharge for the landfill area is primarily from precipitation infiltration and possibly from building drainage	Incorporated	WRB 9/29/95
M	3-33	3 7 1 3 last line	Change "Laramie formation to "Laramie Formation	Incorporated	WRB 9/29/95
M	3-33	3 7 1 3 1 2nd sentence	Change blow" to "below"	Incorporated	WRB 9/29/95
M	3 34	3 7 1 3 1 4th sentence	Add a comma after MSL	Incorporated	WRB 9/29/95
G	3 35	3 7 1 3 2 3rd para 3rd sent	Change in stark contrast to to much more permeable than	Incorporated	WRB 9/29/95
M	3 35	3 7 1 3 2 last line	Change large to great"	Incorporated	WRB 9/29/95
M	3 37	3 7 2 2 4th para 5th sent	Change lithologic to sedimentologic	Incorporated	WRB 9/29/95

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G	3 38	3 7 2 2 1st comp para 3rd & 4th sentence	Change dug to excavated and deep pocket" to "thick section	Incorporated	WRB 9/29/95
M	3-38	3 7 2 2 2nd para 1st & 6th sentence	Change Arapahoe Formation and the Laramie Formation to Arapahoe and Laramie Formations and Arapahoe Sandstone to Arapahoe Formation Sandstone	Arapahoe Formation has been deleted because it is not present in the area of IHSS 133	WRB 7/29/95
G	3 41	3 7 3 2 3rd para 1st sent	Change undivided to undifferentiated	Incorporated	WRB 7/29/95
M	3 42	1st para	Change older Quaternary" to older Quaternary aged	Incorporated	WRB 7/29/95
M	3-43	1st comp para	Change highly impermeable layer" to relatively impermeable	Incorporated	WRB 9/29/95
M	3 46	3rd para	Change Arapahoe and Laramie formations to Arapahoe and Laramie Formations	Incorporated	WRB 9/29/95
M	3-47	1st para	Change lithologic to sedimentologic	Incorporated	WRB 9/29/95
G	3-47	last para	Change "through infiltration of precipitation to "from precipitation infiltration	Incorporated	WRB 9/29/95
M	All figures		Eliminate incorrect location of IHSS 133 1	The source and date of coverage has been added to the maps that were revised	WRB 9/29/95

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	4-1	4 1 1 1st para	Change "was collected to "were collected	Incorporated	WRB 9/29/95
G	5-4	5 3 1 2 1st sent.	Change come from IHSSs in OU5 to are sourced in OU5 IHSSs	Incorporated	WRB 9/29/95
M	5-6	last para on page 4th	change certain amount (mass) to certain mass"	Incorporated	WRB 9/29/95
M	5 7	5 3 1 4 2nd sent	Change simulation produced to simulation of OU5 conditions produced	Incorporated	WRB 9/29/95
M	5-9	5 3 1 4 3 1st para 1st sent	Change has a very low hydraulic conductivity" to is relatively impermeable	Incorporated	WRB 9/29/95
G	5 10	4th line	Change "the cells there to "these cells	Incorporated	WRB 9/29/95
M	5 16	2nd line	Change hydraulic conductivity recharge to "hydraulic conductivity and recharge	Incorporated	WRB 9/29/95
G	5-17	3rd para 9th sent	Change head to "water levels	Incorporated	WRB 9/29/95
M	5 23	2nd para 4th para	How was effective porosity determined by K? This needs to be explained	A detailed explanation has been added	WRB 9/29/95
M	5 23	2nd para last sent	Change highest conductivity" to greatest conductivity"	Incorporated	WRB 9/29/95

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted Initial & date
M	5 33	2nd para 3rd sent	Change Extrapolating source loading undiminished to "The use of undiminished source loading	Incorporated	WRB 9/29/95
M	5 33	5 3 1 5 5 1st para in section	Add sentence on the uncertainty in the conceptual model (e g it may not represent reality)	Incorporated	WRB 9/29/95
G	5 33	5 3 1 5 5 2nd para 1st & 2d sentence	Change dealt with to accounted for" and highest" to greatest"	Incorporated	WRB 9/29/95
G	5 34	Item #1 & 1st compl para	Change highest to greatest in both item 1 and in the first complete paragraph (twice in 1st sentence)	Incorporated	WRB 9/29/95
G	5 34	1st complete para	Change "front of the plume has reached to leading edge of the plume has intercepted	Incorporated	WRB 9/29/95
M	5 34	Item #6	Change likely concentration over mean concentration to likely concentration and mean concentration	Incorporated	WRB 9/29/95
M	6-1	Last sent on page	Delete this sentence The site location has already been described	Incorporated	WRB 9/29/95
M	10 1	10 1 2nd para 2nd sentence	Change "processes combine interactively to provide to and conditions are interconnected and provide	Incorporated	WRB 9/29/95

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M	10 1	10 1 2nd para. 3rd sentence	Add "via groundwater" at the end of the sentence	Incorporated	WRB 9/29/95
M	10 1	10 1 3rd para 2nd sentence	Change "Rocky Flats to "RFETS	Incorporated	WRB 9/29/95
M		11	Use a consistent reference citation Some dates are set off by commas others by periods	Incorporated	WRB 9/29/95
G	11 7		EG&G n d Please note that the environmental reports are published the year following the period covered in the report The 1991 Environmental Report was published in 1992	This has been noted in section 11	WRB 9/29/95
M		5 3 1 4 6	Please summarize in this section the information from the memo written regarding ASI s recharge numbers	Incorporated	WRB 9/29/95
M		5 3 1 4 6	Please mention that the large value of PET at RFETS (≈ 40 inches per year) increases uncertainty of a large recharge value	Incorporated	WRB 9/29/95
M	5 13	5 3 1 4 6 2nd para 1st sent	Please reference the source that ET values are low in winter	The text was modified to generalize this statement based on the uncertainty of the recharge values	WRB 9/29/95
M		Fig 3 9 & 3 10	Change Colluvium undevided to Colluvium undivided in legend Eliminate Pleistocene brackets for bedrock	Incorporated	WRB 9/29/95

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M			Modify fill pattern claystone to something other than "bricks for figs 3-17 3-18 3-19 3-20A & 3-20B Make figure same scale if possible	Incorporated however the scale will not be revised	WRB 9/29/95
M			Explain what the numbers at the bottom of the cross sections are on Figs 3-27 3-28 & 3-29 Also on Figs 3 31, 3-32, 3-33	The figures have been revised	WRB 9/29/95
M		Figs 3-37 3 38 3 39	Is the cross section location map actually not to scale or is the scale just not posted It doesn t appear to be a sketch map but rather part of a scaled map	A scale bar has been added to the cross section location maps	WRB 9/29/95

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	Name	Bldg	Phone	fax	

Document	RF/ER 95-0098	Q	Draft	OU5 RFI/RI Report (Woman Creek Priority Drainage)
	Number	Rev	Draft or Final	Title

General (G) comments require resolution but do not require resolution acceptance Mandatory (M) comments require resolution and resolution acceptance 1 A03 PPG-004 provides complete definitions of General and Mandatory comments

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G	ES 2 to ES 4	Exec Summary	Too much detail on IHSSs and PCOCs for an executive summary suggest omitting this discussion or trimming it and tying it directly to the COCs and related risk conclusions which are well communicated on pages ES 5 through ES 7	Agree the Executive Summary has been revised	9/28/95
G			Is it clear as to how fate and transport models feed into risk assessment??	Text has been modified for clarification Note that this paragraph describes the methodology for assessment of the stream reaches It does not describe the results of the methods used for a certain time period These results are presented in subsequent paragraphs the appendices and Fedors and others (1992) and Fedors and Warner (1993) The measurement period is discussed in the previous paragraph	

____ No Comments

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	4-4	4 1.2 1 2nd para	(Last sentence) 94% of the data were validated but from what subset what percentage of the data were usable?	As stated approximately 99 % of samples collected for the TM15 investigation were analyzed and of these 94% have been validated As noted on page 4-11 the completeness goal for the project was 90% but the estimated completeness was 103 % due to the collection of additional samples	
M	4-9	Table at bottom of page	Clarify whether these numbers are totals for rejected data or just percentages of rejected data based on laboratory accuracy criteria for validation/rejection	As stated in the text and the table these are percentages of records rejected within each analytical suite (metals radionuclides VOCs/SVOCs and pesticides/PCBs) The overall average for all suites is 2 3 % rejection with pesticides/PBCs having the highest rejection rate (3 0 %) of the four suites .	
G	As above	As above	Both topics noted above (/ data validated and / data rejected) relate directly to completeness of the data set and should be discussed in the completeness section accordingly (§4 1 2 6)	Either a small table will be included in Section 3 1 2 6 or the reader will be referred to the discussion of percent validation and percent rejection on the previous pages	
M	4 10	4 1 2 4	The narrative is correct but too general how well do the final actual samples taken compare with the sampling plan (and modifications) in terms of 1) quantity taken 2) media types 3) analytical suites and 4) locations? If the actual samples taken compare well with work plan specs then your conclusion as stated is justified but we don t know how well they compare until a summary comparison is given Add a table that quantitatively expresses actual numbers vs plan numbers with respect to the criteria	A table has been added following the example given in SOP ADM 8 02	

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
			noted above SOP ADM 8 02 Evaluation of ERM Data for Usability in Final Reports provides an example of such a summary		JC
M	4-10	4 1 2 5	Refer to the SOPs used for field sampling and data evaluation (or refer to a table previously listing all of such e g in a work plan or tech memo) as well as the GRRASP to provide explicit corroboration of comparability	A reference to the SOPs and the GRRASP has been added to this section (now Section 2 5 of Appendix O)	JL
M	4 7 4 8	4 1 3 3 2d and 3d para	The rationale leading to your conclusions here is inherent only and needs clarification state the purpose of the trip field, and rinsate blanks to detect false poses in the real samples and because so few volatile contaminants were detected in real samples (too few to consider as contaminants of concern in the risk assessment) false positives are not possible in the OU5 scenario and therefore this deficiency as a DQO does not impact ultimate conclusions concerning either COCs or risk	The text has been revised to included the wording suggested by this comment This paragraph has been moved into Section 2 3 of Appendix O positives	JL
M		Table 4 8	2 of the analytes exceed 100% the percentages must be corrected	This Table 4-8 has been corrected and is now Table)-8 in Appendix O	JC
M		Tables 4-17A 4 17B 4 22A & 4 22B	Although these tables are touched upon in the text it is still unclear as to why the RPD values for rads in water are so poor e g values for dissolved are as poor as values for total rads are nondetect values being used in these summary tables? They shouldn t be in fact nondetects between real and matching dupes should be tallied as 100 / RPD values, even though 100 / is not	Per DOE Order 5400 1 all data (except rejected data) for radionuclides are used A discussion was added to Section 4 1 2 2 (now Section 2 2 of Appendix O) to explain that the poor RPD values for radionuclides in water is in part due to the relatively large variability in the very low activities detected	JL

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			arithmetically correct (the point being a nondetect for a real is essentially the same amount of contaminant as a nondetect for a duplicate practically speaking) Clarify and better justify the insignificance of these RPD values		
M		General Add a sub δ in δ 4 1 or a new Quality δ	Significant deviations from the work plan (field sampling plan and any subsequent tech memos) should be discussed here as well as their impact or lack of impact on the conclusions drawn from this study (or did the work comply with the plan in every way?) further assessment/oversight activities and reports (of which there were must be discussed to substantiate as a fundamental part of the verification process of your efforts (we have the internal QA assessment reports on file when you need information for a roll up into the report) call Mic Prochazka X6903 if you need assistance in gathering and summarizing this information	Table 1 1 describes the deviations from the work plan A summary of the internal QA assessments will be included in Appendix O	
	6 33 6 34	6 6 3 6 7 para	The rationale for not performing a quantitative uncertainty analysis is inadequate esp presented with the conclusion that the risk at OU5 is acceptable (or $<10^{-4}$) This conclusion immediately begs the question what is the possibility/probability of a false negative (i e deciding that the risk is acceptable when it really isn t)? Some type of error quantification must be attempted for the ultimate risk numbers if these numbers really carry the significance that are portrayed in the report	In meetings held among DOE EG&G and the agencies during the past year it has been consistently stated that a quantitative uncertainty analysis would be performed only for driving pathways for Areas of Concern with cumulative risk estimates over 10-4	

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			(or the risk is acceptable or unacceptable based exclusively risk calculations is it not?)		
M		Table 6 141 1st box	Based on the DQO of completeness which addresses the validated data with respect to total data in the OU5 set as well as the limited data rejected state that the data set used is complete with respect to an adequate percentage of the data that actually went through the validation process (probably >80%) and that (as a result) there is no impact on the risk estimate	Appendix O has been added to the report address the validated data with respect to total data in the OU5 data set as well as the limited data rejected	
G		Table 6-142	The risk of cancer is the same for a current security worker and a future office worker? Inherently it doesn t seem likely just a reality check	The site specific reasonable maximum exposure (RME) risk estimates for both of these receptors is correct the RME exposure factors which were agreed upon by EG&G DOE EPA and CHPHE are the same for both receptors However the agreed upon exposure factors for central tendency (CT) differ The CT ingestion rate for the current onsite industrial worker is 10 mg/day and for the future onsite office worker it is 5 mg/day The CT inhalation rate for the current onsite industrial worker is 0 83 m3/hr and for the future onsite office worker it is 0 63 m3/hr	

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G	ES 2	2nd para last sent	IHSS 196 is located within the boundaries of IHSS 115	Incorporated	
G	ES 3	2nd para 1st sent	First use of SID spell out South Interceptor Ditch	Incorporated	
G	ES 3	2nd para 1st sent	SID was constructed upslope and parallel (to the north) add and parallel	Incorporated	
G	ES 3	2nd para last sent	NPDES is a permit, not an agreement replace agreement with permit	Incorporated	
G	ES 1		A site location map showing locations of the IHSS s would be helpful to the reader reference in the 3d paragraph	Incorporated	
G	ES-4	3rd para last sent	Take out accurate and conservative ≠ accurate	Incorporated	

____ No Comments

Ed Mast (Reviewer's Name) — E Mast (Signature)

Resolutions Accepted: E Mast (Signature) — 9/29/95 (Date)

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G	ES-6	2nd para	Reference a Figure that shows the AOC groupings	Incorporated	
G	Figure 1 2		The IHSS boundaries for IHSS 142 10 & 142.11 follow the high water line in the newest release of the HRR	Incorporated	
G	1-4	2nd para	IHSS 196 is located within the boundaries of IHSS 115	Incorporated	
	1 5	2nd para	The ash pits are only 3 feet deep?	The text has been revised to read ash pits are approximately 8 18 feet deep and 20 ft x 150 ft in area	
	1 5	2nd para next to last sent	exact boundaries and dimensions of each unit are somewhat undefined Now that the RI has been completed aren t the boundaries fairly well known? Could an additional sentence state this?	The sentence has been deleted	
	1-4/1-6	1st para	The DOE citation 60 kg of depleted uranium were in inadvertently burned and 40 kg were recovered does not jive with page 1 6 3d para estimated 100 gm disposed in ash pits (I know this came from the HRR cite only one or the other reference)	The 60 kg depleted uranium cited in the DOE reference ended up in the landfill The 100 grams referenced on page 1 6 was reported to be disposed of within the ashpits IHSS 133 The text has been modified to clarify this point	
	1 7	1st sent	south of RFETS should be south of the Industrialized area	Incorporated	
	1 9	last para 1st sent	South should not be capitalized	South is part of the name of the area investigated and should remain formalized	

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted Initial & date
	Table 1 1	Sheet 2 of 6	Activity Soil Borings page 7 18 of the Work Plan estimates approximately 85 borings will be required, not to be determined	Incorporated	
	2 14	3rd para 2nd sent	States location of 20 boreholes are shown on Fig 2-4 I can not identify those borings from the legend on that Figure	Figure 2-4 has been changed to show the locations of the boreholes	
	2 27	last para	It has recently come to light that the rad anomaly is (ash?) on the ground near the scrap and not the scrap For more information contact Jerry Anderson RMRS X6974	The text has been modified	
	2 29	3rd para	U 233/234 & U238 were detected Can a statement be made that the ratio of these be indicative of depleted Uranium?	Incorporated	
	2-3	2nd para	which do not change to which does not.	Incorporated	
	2 35	2 2 2 6 2 1st sent 2nd line	saturation of soils there are several areas change are to were	Incorporated	
	Fig 3 11		Use site specific data to locate the trace of the fault I do believe the fault through the old landfill is misplaced	The Figure has been revised The inferred fault is projected through the Original Landfill east of IHSS 196	
	Fig 3 18		Use the underlying bedrock symbol for claystone instead of the symbol used on the map which is for limestone Please use the correct pattern A limestone bedrock could have significant connotation when it comes to permeability	The Figure has been revised	

Ed Mast
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	Page 3-15 3rd para.	2nd sent.	OU5 in Figure 5 18 I think the Figure Reference is incorrect	Agree the correct figures have been referenced	
	Page 3-17	2nd para	I believe the ERA will be under the same cover, not as separate volume	Agree the text has been revised	
	Fig 3-17 3-18 3-19 3 20A 3 20B		The symbol on these maps for the claystone bedrock is that of limestone Show the claystone symbol	These figures have been revised	
	Fig 3 20A		D take off this is not the end of the x section	This figure has been revised	
	Fig 3 20B		D Take off this is not the start of the x section	This figure has been revised	
	Page 3 38	2nd para last sent	it would not appear that this particular area was excavated for the disposal of incinerated materials Figure 3-28 boring 56393 shows waste/fill material does this contradict page 3-38? and the following para	Agree the sentence has been deleted	
	Fig 3 27 3-28 3-29 3-31 3 32,3 33		Make note on Figures that the x section location is shown on Figure 3 30 (Wouldn t it be better to have Figure 3 30 precede the x sections?)	Agree the sequence of the figures has been revised	
	3 39	1st para	two previously unknown ash pits (Figure 3 27 3 30 3 31 and 3 32) You refer to TMEM anomaly as unknown pit in the text and possible trench in the Figure make consistent It's not clear from text or the x section where the 2d unknown pit" is	The text and the figure have been revised	

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	4-8	1st para	2nd line the exception of for seep water samples should this be four?	The correct work is "for" This sentence is stating that VOC s were identified as COCs for seep water as an environmental medium not specific seep water samples	
	Fig 4-1A 4 12		In Legend BM move X < = Background Mean (BM) to the top of Legend and change EXPLANATION to Legend	The figure has been revised	
	Figure 4-6A		In Legend RL move 0 = Detects less than the Reporting Limit to the top of the Legend	The figure has been revised	
	Page 5 2	Last para	Should there be a reference citation for TM12? DOE, 1995b	Yes the reference to the EATM has been incorporated	
	Page 5 8	3rd para	"The model grid (Figure 5 5) is should be grid (Figure 5 5a-d) is	Incorporated	
	Page 5 11	1st para last sent	.as shown on Figure 5 6 should be as shown on Figure 5-6a-d	Incorporated	
	Page 5 12	1st para	Figure 5 7 shows the should be Figure 5 7a-d show the	Incorporated	
	Fig 5 8		Include in Legend PET = Potential Evapotransportation	Incorporated	
	Fig 5 10		The horizontal axis is not completely labeled	Incorporated	
	Page 5 15	2nd para	Figure 5 5 should be Figure 5 5a	Incorporated	
	Page 5 21	2nd para	Figure 5 12 should be Figure 5 12a-d	Incorporated	

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
	Page 5 22	3rd para	Figure 5 13 should be 5 13a-d and Figure 5 14 & Figure 5 15	Incorporated	
	Page 5-23	1st para & 2nd	Figure 5 16 should be 5 16a-d	Incorporated	
M	5 37	1st para	into Mower Reservoir and Standley Lake Does Mower flow into Standley Lake? I though that was no longer the case The only flow going into Standley Lake from Women Creek would be that captured below the Diversion Canal below C2 Dam	Mower Reservoir does not flow into Standley Lake and Standley Lake" from second to last sentence in the first paragraph was deleted	
G	5 37	2nd para	Doesn t the South Boulder Diversion Canal contribute water to Woman Creek via a leaky metal flume that crosses over the drainage? Should this be mentioned?	The Boulder Diversion Canal does contribute water to Woman Creek via a leaky flume over the Woman Creek Drainage The following sentence was added at the third to the last sentence in the first paragraph "Leakage does occur from this flume with the SBDC contributing minor amounts of water to the drainage	
	5 38	1st & 2nd Bullet	You refer to a sub basin 3 (shown on Figure 5 24) but that term is not shown on the Figure 5 18 and I don t find the term Sub Basin 3 used elsewhere in the text to this point Show sub basins on Figure 5 18 or define what you mean	The references to sub basin 3 in these bullets have been deleted	
	5 61	3rd para	Figure 5 29, should be Figure 5 29a d	Incorporated	
	5 62	1st para	Need 2 lines between next subtitle 5 3 2 12 1	Incorporated	

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
	6-36 & 37	Risk Assess Summary	Throughout this section (6 7) all the values have been shown with Ø significant figure e g 1E-05 2 E-05 in the individual write-ups of the sections the same number are shown typically to 1 significant figure e g 1 1E 05 2 4E-05 suggest the text should be consistent to either 0 or 1	Actually there are no zero significant figures 1E-05 is an example of one significant figure RAGS (EPA 1989) the risk assessment guidance we use states Resulting cancer risk estimates should be expressed using one significant figure only Therefore the risk estimates in Section 6 7 have been changed to conform with this guidance However rather than go back and redo all the risk calculation tables which present risk estimates using two significant figures we have added a note in the beginning of this section that states the risk estimates are given using one significant figure per RAGS and that the tables use two significant figures to provide more detail	
	6 37	2nd para 2nd sent	AOC1 was calculated to be 36E 05 and should be 2.6E 05	Incorporated	
	10 3	1st bullet 2nd sent	"The maximum cancer risk estimate of 3 E 05 for should be estimate is 3E 05	Incorporated	
	10 3	2nd bullet 2nd sent	Same as above change of to is	Incorporated	

10/5/95

REVIEW COMMENT SHEET

Return comments to	Carol Bicher (Name)	080 (Bldg)	9100 (Phone)	8663 (fax)	Comment Due Date: August 31, 1995
Document	RF/ER 95-0098 (Number)	O (Rev)	Draft (Draft or Final)	OU5 RFI/RI Report (Woman Creek Priority Drainage) (Title)	

General (G) comments require resolution but do not require resolution acceptance Mandatory (M) comments require resolution and resolution acceptance 1 A03 PPG-004 provides complete definitions of General and Mandatory comments

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
G			Portions of the report are well written and clearly convey the results of the technical investigations Section 5 Fate and Transport is excellent The discussion is well written and clearly describes the methods applied and results of the modeling In contrast Section 4 3 within the Nature and Extent chapter is awkward and confusing The organization of Section 3 needs improvement	Accepted Sections 3 has been reorganized and section 4 has been revised	MAS 10/4
G		all	Editorial comments see notes in text	Reviewed text has been scanned and noted edits has been incorporated	MAS 10/4
M		3 5 1	Under subsection 3 5 1 (Geologic History Setting and Deposits) why are the surficial deposits not discussed? Also be sure to refer to the latest interpretation of RFETS geology (1995 Geologic Characterization Report) rather than earlier interpretations	The text has been rearranged to include discussion of all geologic deposits under subsection 3 5 1 and the interpretations presented in the 1995 Geologic Characterization Report will supersede earlier interpretations of RFETS geology	MAS 10/4

____ No Comments

Mary Siders (Reviewer's Name) _____ (Signature)

6933 / 7473 / 8704 (Ext./Pager/Fax) 080 / Geochemistry / RMRS (Bldg / Dept / Company) _____ (Date)

Resolutions Accepted

Mary L Siders (Signature) 10/4/95 (Date)

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
		3	Figures 3 17 3 18 3 19 3 20a 3 20b Why is the symbol for limestone (brick pattern) used to represent Laramie claystone on these cross-sections?	A more appropriate pattern will be used to portray the claystone	MKS 10/4
	4-3	4	Page 4-3 second para These are validation codes, not data qualifiers as stated	The text has been corrected to read validation codes	MKS 10/4
	4-12	4	Page 4 12 State that the UTL test functions as a hot spot test	The explicit statement that the UTL functions as a hot spot test has been included in text	MKS 10/4
	4-13	4	Page 4 13 The following criteria were used to do what??? There is no statement of purpose	The statement of purpose has been added	MKS 10/4
	5 4	5	Page 5 4 Last portion of sentence in subsection 5 3 1 2 is unnecessary The whole point of COCs is that they represent likely contamination therefore by their very nature they should be present at levels above those of background	The redundant phrase has been deleted	MKS 10/4
	5 53	5	If the culvert has a high point in the middle how could water pond on the high point? Or is water ponded upstream of this high point?	The sentence has been modified to clarify that the water ponds upstream of the culvert s high point	MKS 10/4
		5	Table 5-4 The term probability of un correlation is somewhat confusing Is this modeling jargon? What does it actually mean? (It appears in other tables too)	References to the probability of uncorrelation have been removed on Tables 5 4 and 5 5 The statistic is generated by HCMP the statistical program used in calibration analysis and the meaning of the term is not known Since this statistic is not used in the model calibration, it is not necessary to present it	MKS 10/4

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
	all	6	Page 6 22 The text has struck my chemistry pet peeve by stating that there are two classes of potential carcinogens chemical and radionuclides Radionuclides ARE chemicals and chemical refers to everything from water to oxygen to vanilla extract! Please rename the two classes as nonradioactive and radioactive chemicals Correct this error throughout Section 6 5 2	The text has been corrected to refer to nonradioactive chemical carcinogens and radioactive chemical carcinogens	MTS 10/4
	all		Instead of soil borehole sampling why not borehole-soil sampling or subsurface soil sampling ? Either of these would parallel surface soil sampling soil borehole sampling does not	soil borehole sampling has been replaced with borehole soil sampling or subsurface soil sampling except where a reference to document with this phrase in the title	MTS 10/4
	all		The report needs an editorial review to ensure consistency of format and word usage/construction (e g capitalization hyphenation etc) Wellpoint/well point/well point larger scale map/larger scale map site wide/sitewide etc Correct noun/verb disagreements inappropriate word choices etc	The report has been technically edited	MTS 10/4

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9/28/95

REVIEW COMMENT SHEET

Return comments to Carol Bicher (Name) 080 (Bldg.) 9100 (Phone) 8663 (fax) Comment Due Date August 31, 1995

Document RF/ER 95 0098 (Number) O (Rev) Draft (Draft or Final) OU5 RFI/RI Report (Woman Creek Priority Drainage) (Title)

General (G) comments require resolution but do not require resolution acceptance Mandatory (M) comments require resolution and resolution acceptance 1 A03 PPG-004 provides complete definitions of General and Mandatory comments

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	xi	Appendix	Add Geophysical Logs to Appendix B	Incorporated	MRW 10/10/95
M	ES2 to 6 3	Doc	Incorporate edits and typographical mistakes as indicated on the pages marked with stickies and red pen or pencil	Incorporated	MRW 9/29/95
M	Table 1 1		Add TM15 scope of work specifically bedrock monitoring wells and the geotechnical investigation	Incorporated	MRW 9/29/95
M	Doc		Context of text switches from past tense to present tense and then back to past tense This needs to be uniform throughout the document Text should remain in past tense	Text has been edited to read in the past tense	MRW 9/29/95
M	2 36	2 2 2 6 2	Fourth paragraph Is this dissolved radium?	No it is total radium	

____ No Comments

Mark Wood (Reviewer's Name) Mark R Wood (Signature)

8784 / 5904 / 8663 (Ext./Pager/Fax) 080 / Hydrogeology / RMRS (Bldg / Dept. / Company) 10/10/95 (Date)

Resolutions Accepted Mark Wood (Signature) 10/10/95 (Date)

Page 1 of 6

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	2 30 and Figure 2 12	2 2 2 3 3	Shift Sample Location Map IHSS 133 (Figure 2 12) to the west or change the scale to incorporate the magnetic anomaly west of IHSS 133 See Figure 2 5 3 3-1 from TM15	Incorporated	MRW 9/29/95
M	Table 2-6		Incorporate all TM15 samples not just those from the 1994 locations Add samples from all locations which had samples collected from during the implementation of TM15	TM15 samples will be incorporated the QC data will be moved to Appendix O along with a brief write up Section 2 3 will be moved to the uncertainty section of the HHRA	MRW 10/10/95
M	2 39	2 2 3 3 1	First three paragraphs Does this include sampling within the SID How many water samples were collected how many samples/points during the HydroLab surveys and what is a few	The sentence has been revised to indicate that samples from the SID are also included in this discussion The first sentence of the second paragraph has been revised to read twenty eight surface water samples The text of this paragraph was also revised to indicate that 2 Hydrolab surveys were performed	MRW 9/29/95
M	2 41	2 2 3 4 1	First paragraph first sentence what does (2 13) refer to? Second paragraph fourth sentence we do not need to report TICs	It refers to Figure 2 13 and the text has been revised TICs have been moved to Appendix O	
M	2 48	2 2 4 4 2	Call out the surface soil sample location number for each anomaly that was investigated	Incorporated	
M	Table 2 2		Incorporate edits and add a column reporting the screen interval See attached OU5 Field Program summary table	Incorporated	

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TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted Initial & date
M	Figure 2 1		Add all preTM15 sampling locations in IHSS 115 to the map	Incorporated	MRW 9/29/95
M	Figure 2 4		Replace Figure 2-4 with the attached Plate showing all sampling locations in IHSS 115/196	Incorporated	
M	Figure 2 10		Add well points and wells to Pre TM15 Location Map	Incorporated	
M	Figure 2 11		Add TDEM anomaly locations for TDEM 1 and TDEM 2	Incorporated	MRW 9/29/95
M	3 9	3 5 1	Section 3 5 1 needs to summarize each of the geologic units present in OU5 Units should be discussed/presented in order from oldest to youngest	Incorporated	MRW 9/29/95
M	3 11	3 5 2	Delete Section 3 5 2 these observations belong in the discussion of the geology of each IHSS specifically IHSS 115 133 and the Surface Disturbance South of the Ash Pits	Section has been deleted and text moved	
M	3 13	3 5 3	Rewrite Section 3 5 3 per Fred Grigsby s input	Section has been revised	
M	3 27 to 3 33	3 7 1 2	Summarize IHSS 115/196 site specific geologic observations	Incorporated	
M	3 28 to 3 29	3 7 1 2	Move summary descriptions for Landslide Deposits Artificial Fill and Rocky Flats Alluvium from page 3 28 to Section 3 5 1	Text has been moved	

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted Initial & date
M	3 37 to 3 39	3 7 2 2	Summarize IHSS 133 site specific geologic observations	Incorporated	MW 9/29/95
M	3 37 to 3 38	3 7 2 2	Move Colluvium summary description from page 3 37 and 3-38 to Section 3 5 1	Text has been moved	
M	3-41 to 3 42	3 7 3 2	Summarize IHSS 142 site specific geologic observations,	Incorporated	
M	3 41 to 3 42	3 7 3 2	Move Piney Creek Alluvium summary description from pages 3 41/42 to Section 3 5 1	Text has been moved	
M	Fig 3-4 and 3 5		Add inferred fault locations Reference source	Incorporated	
M	Fig 3 6 or 3 7		Delete one of the Figures they are repetitive and we do not need to show both	Agree Figure 3 6 has been deleted and replaced with the OU5 Surface Soil Map	
M	Figure 3 8		Revise or delete Figure is incomplete as it stands Some intervals are siltstone and not sandstone, revise as needed	The figure has been revised	
M	Figures 3-9 and 3 10		Reference source	Incorporated	
M	3 11		Revise inferred fault location in OU5 area or delete figure as the faults can be located on the bedrock geologic map Figure 3 4 and 3 5	Incorporated	

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted initial & date
M	Figure 3 16		Revise as necessary with edits to depth of alluvium incorporated Cross check alluvial contours with Figure 3 5	Incorporated	MRW 10/10/95
M	Figures 3 17 to 3 20		On all cross sections replace fresh claystone symbol using limestone with claystone symbol after Compton 1962 Manual of Field Geology Reorganize figures present cross section location map first then cross sections A through D in order Text should reflect the same order of presentation	Incorporated	MRW 9/29/95
M	Figure 3 21		Revise and clean up Figure 3-21 as marked and as necessary to make the figure readable	Incorporated	MRW 10/10/95
M	Figure 3 26		Revise as necessary with edits incorporated Cross check alluvial contours with Figure 3-5 Revise Figure on east side by IHSS 133 2 to show natural alluvial thickness contours and not the bulls eye The southern part of IHSS 133 2 appears to be all natural without any fill based on the boring logs	Incorporated	↓
M	Figures 3-27 to 3 33		Reorganize figures present cross section location map first then cross sections A through E in order Text should reflect the same order of presentation Show locations of the TDEM anomalies Add interpreted depth and lateral extent of each ash pit/trench	Incorporated	MRW 9/29/95
M	Figures 3 34 to 3 36		Revise as necessary with edits	Incorporated	↓

TYPE G or M	PAGE	SECTION or LINE #	COMMENT	DISPOSITION	Disposition accepted Initial & date
M	4 20	4 3 2 2	Second paragraph borehole locations 55994 and 56094 indicate waste ash material to depths of up to 18 feet Revise text as necessary	The text has been revised to better indicate that the concentrations exceeding background mean plus 2 standard deviations are either associated with waste or are in samples of alluvium The reference to a depth of 8 feet will be removed	MW 9/29/95
M	4 21	4 3 2 3	Second paragraph how far downgradient from well 58793 has contamination migrated? State the lateral extent. Limited to the area between well 58793 and wells 56593 and 61293 Have any water quality samples ever been collected from wells 56593 or 61293?	Water quality samples have been collected from well 61293 (5693 is a borehole in IHSS 133 3) Well 61293 however is not downgradient from well 58793 therefore data from well 61293 would not assist in determining the lateral extent of contamination at IHSS 133 2 The text has been revised to state that it its not known how far the lateral extent of COCs in groundwater downgradient of IHSS 133 2 extends beyond 58793	
M	Appendix B		Insert revised and edited boring logs	Incorporated	

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